

## Abstract

Carbonaceous, composite tooling fabricated from pitch-based or coal-based cellular or porous products, "carbonaceous foams" having a density of preferably  
5 between about  $0.1 \text{ g/cm}^3$  and about  $0.8 \text{ g/cm}^3$  that are produced by: 1) conventional pitch foaming processes or; 2) the controlled heating of coal particulate preferably up to  $\frac{1}{4}$  inch in diameter in a "mold" and under a non-oxidizing atmosphere.

According to a specifically preferred embodiment, the starting material coal has a free swell index as determined by ASTM test D720 of between about 3.5 and about  
10 5.0.

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